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June 9, 1998

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CLEAN Contract N62474-94-D-7609 (CLEAN II)  
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**Subject: Responses to Comments on the Draft Final Station-Wide  
Feasibility Study Report  
Moffett Federal Airfield**

Dear Messrs. Chao and Chan:

Enclosed are three copies of the responses to comments (RTC) on the draft final station-wide feasibility study report. Comments were received from the California Environmental Protection Agency (Cal/EPA), Department of Toxic Substances Control (DTSC) and the San Francisco Bay Regional Water Quality Control Board (RWQCB) in February 1997. Responses to these comments were inadvertently omitted from the responses to agency comments sent to the Navy on February 5, 1998. A copy of these responses have been distributed to the regulatory agencies and project personnel. If you have any questions, please call me at (303) 312-8816 or Tim Mower at (303) 312-8874.

Sincerely,

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TTB/rkr

Enclosure

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**RESPONSES TO AGENCY COMMENTS  
DRAFT FINAL STATION-WIDE FEASIBILITY STUDY (SWFS)  
MOFFETT FEDERAL AIRFIELD**

**1.0 INTRODUCTION**

This document presents the Navy's responses to comments from the regulatory agencies on the draft final station-wide feasibility study (SWFS) report for Moffett Federal Airfield (MFA), dated November 6, 1996. The comments addressed below were received from Mr. Joseph Chou of the California Environmental Protection Agency (Cal/EPA) Department of Toxic Substances Control (DTSC) on February 14, 1997. They include comments from DTSC and from the San Francisco Bay Regional Water Quality Control Board (RWQCB).

**2.0 RESPONSES TO DTSC COMMENTS**

**2.1 GENERAL COMMENTS**

1. **Comment:** The scope of Stationwide Feasibility Study (SWFS) should not be limited to wetland sediments and Golf Course Landfill 2. An integrated approach should be taken to include information from both the Station-Wide Human Health Risk Assessment and the Site-Wide Ecological Assessment (SWEA). The Navy should take this opportunity to evaluate remedial alternatives for potential risks to public health and environment at Moffett Federal Airfield (MFA). Cumulative risks associated with different media or operable units (OUs) should not be neglected in this report.

**Response:** The results of the station-wide remedial investigation (SWRI), including the human health risk assessment, and the site-wide ecological assessment will be used to guide remedial action objectives and general response actions presented in the final SWFS. Golf Course Landfill 2 is now being addressed under a separate feasibility study.

2. **Comment:** The State disagrees with the Navy that only areas with a total excess cancer risk about  $1 \times 10^{-4}$  have been evaluated in the SWFS. DTSC considers  $10^{-6}$  as the point of departure for human health cancer risk assessment, areas with risks greater than  $1 \times 10^{-6}$  should be evaluated in the SWFS.

**Response:** All areas with risks exceeding  $1 \times 10^{-6}$  for human health will be discussed in the final SWFS.

3. **Comment:** In this report, hazard quotients (HQs) and hazard indices (HIs) are used to determine adverse effects to ecological receptors at Moffett Field.  $HQ_1$  and  $HQ_2$  derived from high toxicity reference values (TRVs);  $HQ_3$  and  $HQ_4$  from low TRVs respectively. It is DTSC's position that HQs derived from the low TRVs ( $HQ_3$  and  $HQ_4$ ) are the best indicators of possible adverse effects for most contaminants. The low TRVs were derived to be reasonable "low-risk" toxicity values. The low TRVs should not be viewed as overly conservative, since uncertainty factors were applied only when insufficient

data were available (e.g. an unbounded lowest-observable-adverse-effect-level, [LOAEL]). No interspecies uncertainty factors were applied, nor were uncertainty factors applied to protect special-status species. HQ<sub>3</sub> and HQ<sub>4</sub> estimates less than one indicate there is low likelihood for adverse effects from the contaminant. HQ<sub>3</sub> estimates greater than one indicate there is a possible adverse effect upon several individuals in the population since the dose is an average over the contaminated area. HQ<sub>4</sub> estimates greater than one indicate there is a possible adverse effect upon individuals exposed to hot spots of contamination, or for species with small home ranges relative to the area contaminated. When the HQ<sub>3</sub> and HQ<sub>4</sub> estimates are greater than one, then more evaluation is needed to refine the estimates through either toxicity testing, laboratory studies, and/or field investigations. If there is confidence in the major components used to estimate HQ<sub>3</sub> and HQ<sub>4</sub>, the low TRV is the appropriate toxicity value from which to derive risk-based cleanup numbers because it represents a reasonable estimate of a chronic no-observed-adverse-effect-level (NOAEL) (although the final cleanup numbers may be higher based upon the other balancing criteria). The high TRVs were developed to provide estimates of dose levels at which significant adverse impacts can be expected on individuals and are also possible at a population level (since the endpoints of the high TRVs are generally significantly increased reproductive impacts or other systemic effects on a majority of the treated animals). The HQs derived from the high TRVs (HQ<sub>3</sub> and HQ<sub>4</sub>) should be used to indicate contaminants which are at levels high enough to warrant expedited removal actions.

Response: HQ<sub>3</sub> greater than 1 and HQ<sub>4</sub> greater than 1 for the protection of avian and mammalian species in the stormwater retention ponds and Eastern Diked Marsh will be use in the final SWFS as indicators of areas that warrant remedial actions. For the Northern Channel, an HQ greater than 1 for the protection of benthic receptors will be used as the indicator of areas that warrant remedial action.

4. **Comment:** Seven remedial alternatives were selected in this report. However, Alternatives 3 through 7 are very similar in many aspects except the size of capping area. It is more like selecting cleanup standards rather than identifying different remedial alternatives. The State encourages the Navy to reevaluate all the candidates for remedial technologies and processes to assure more representative alternatives are included.

Response: The remedial alternatives to be presented in the final SWFS evaluate several technologies for the areas with HQ<sub>3</sub> greater than 1 and HQ<sub>4</sub> greater than 1.

5. **Comment:** Future land use plays a very important role in determining cleanup levels. The Navy should clearly address NASA's [National Aeronautics and Space Administration's] long term proposal or local government and community's reuse plan (if any) at MFA. Without a future land use plan, DTSC's position is that the Navy then should clean up the base to unrestricted use levels.

Response: Future land use is addressed in Section 1.2.3.1 of the revised draft final SWFS. Continued use as a federal airfield is still the most probable future land use scenario.

## 2.2 SPECIFIC COMMENTS

1. **Comment:** Page 2, Section 1.1: The scope of Stationwide Feasibility Study should not be limited to sediments and Golf Course Landfill 2. An integrated approach should be taken, which includes information from both the Stationwide Baseline Human Health Risk Assessment and the Site-Wide Ecological Assessment (SWEA).

**Response:** See response to general comment 1.

2. **Comment:** Page 3, 2<sup>nd</sup> Paragraph; Section 1.1: The first sentence, “Although groundwater monitoring is considered, groundwater cleanup is not included since cleanup actions have already been selected. . .”, needs to be further clarified. More information regarding location(s) and objective of groundwater monitoring should be provided.

**Response:** Additional discussion of the activities being conducted to clean up groundwater was added to this section of the revised draft final SWFS.

3. **Comment:** Page 3, 3<sup>rd</sup> Paragraph; Section 1.1: Please discuss the current status of petroleum corrective action program. In addition, it is unclear how the petroleum contaminated sediments and groundwater in the wetland area will be remediated.

**Response:** A paragraph discussing the current status of the petroleum sites corrective action program will be added to the final SWFS. Any petroleum contamination will be handled by this program.

4. **Comment:** Page 8, 3<sup>rd</sup> Paragraph; Section 1.2.3.2: The OU2-East no-action ROD [record of decision] was not necessarily based on “no risks to human health.” More accurately, a “no action” risk management decision was made because the elevated concentration of beryllium at OU-2 East was determined naturally occurring.

**Response:** This paragraph has been reworded in the final SWFS to remove the statement about “no risks to human health.”

5. **Comment:** Page 11, 3<sup>rd</sup> Paragraph; Section 1.2.3.7: “No information on the source of the material dumped in this area. . .” or “incidental dumping of excess soil, grass, brush . . .” does not explain the detection of VOCs [volatile organic compounds], SVOCs [semivolatile organic compounds], or TPHs [total petroleum hydrocarbons] at the site. Furthermore, information should be provided to support the conclusion that “closure of this area is not required.”

**Response:** Section 4.21.2 of the final station-wide remedial investigation discusses the results of the investigation at Golf Course Fill Area 3. This reference will be added to the final SWFS.

6. **Comment:** Page 11, 4<sup>th</sup> Paragraph; Section 1.2.3.7: Please explain 1) what is the risk level for chlorinated solvents at Site 24; 2) if the existing groundwater water treatment system at Site 9 will be able to clean up chlorinated organic compounds under Hangar 1?

- Response: Petroleum sites are discussed in Section 1.2.4.5 of the final SWFS. The risks at the petroleum sites due to VOCs were presented in the final station-wide RI. Groundwater from the area of Hangar 1 will be treated by the west-side aquifers treatment system.
7. **Comment:** Page 12, 4<sup>th</sup> Paragraph; Section 1.2.4: Please consider to include a MEW [Middlefield-Ellis-Whisman] plume map in the report.
- Response: Maps showing the extent of groundwater contamination on the west side of MFA are presented in the final SWRI report. The SWFS will refer to this report.
8. **Comment:** Page 13, 4<sup>th</sup> Paragraph; Section 1.3.1: DTSC has repeatedly commented on the SWRI report that the value of one-half acre was chosen for residential exposure area because, due to the sampling density, using a smaller exposure area did not change the results and because the one-half acre size provided a better graphical presentation. In any risk management decisions at Moffett Field regarding actual or planned future residences, any increase in risk as a result of the use of the larger exposure area size should be individually assessed, and if indicated, risks recalculated using an appropriate value for lot sizes. All these discussions should be included in the subject report.
- Response: The results of the human health risk assessment are summarized in Section 1.3 of the final SWFS. The risk assessment methodology is discussed in detail in the SWRI report. This information will be included by reference in the final SWFS report.
9. **Comment:** Page 14, 3<sup>rd</sup> Paragraph; Section 1.3.1: Again, as we have mentioned in our comments on SWRI report, the DTSC default value for adherence of soil to skin is 1.0 mg/cm<sup>2</sup> [milligrams per square centimeter], not 0.2 mg/cm<sup>2</sup>. Please summarize previous discussion on this issue and explain why the value of 0.2 mg/cm<sup>2</sup> was chosen by the Navy.
- Response: See response to comment 8.
10. **Comment:** Page 15, 2<sup>nd</sup> Paragraph; Section 1.3.1: Please explain why the risk from recreational exposure was assessed in the SWRI report but not mentioned in this document.
- Response: A summary of the recreational scenario for the human health risk assessment will be included in Section 1.3 of the final SWFS.
11. **Comment:** Page 15, 4<sup>th</sup> and 5<sup>th</sup> Paragraph; Section 1.3.1: Please see general comment number 2.
- Response: All areas with risks exceeding  $1 \times 10^{-6}$  for human health will be discussed in the final SWFS.
12. **Comment:** Page 17, 2<sup>nd</sup> Paragraph; Section 1.3.2.1: Please briefly summarize why the three categories of hazard quotients (HQs) were chosen to evaluate potential risks in MFA. What are the differences between HQ=1, HQ=10 or HQ=100?

- Response: The hazard quotients are calculated using the formula shown in Section 1.3.2.3 of the final SWFS. For avian and mammalian receptors, an HQ of 10 for any specific chemical is a result of a concentration of 10 times the toxicity reference value (TRV) being present in the medium of interest.
13. Comment: **Page 17, Last Paragraph; Section 1.3.2.1: Please note that motor oil was also found in surface water from the Eastern Diked Marsh.**
- Response: The nature and extent of contamination in OU6 are discussed in Section 1.2.4.6 of the SWFS. The presence of motor oil is noted in this section.
14. Comment: **Page 24, 5<sup>th</sup> and 6<sup>th</sup> Paragraphs; Section 1.3.2.2: Please clarify what is the likelihood of adverse effects on salt marsh harvest mouse. In addition, the Navy should clearly define “high-”, “moderate-” or “low-likelihood” of adverse effects.**
- Response: Results of the final SWEA are presented in greater detail in Section 1.3.2.2 of the final SWFS. This section will include discussion of the risks due to metals. The terms “high-”, “moderate-”, and “low-likelihood” of adverse are discussed in the footnotes to Table ES-2 of the final SWEA.
15. Comment: **Page 25, 4<sup>th</sup> Paragraph; Section 1.3.3: The State agrees with the Navy that the northeastern corner of the Eastern Diked Marsh, the stormwater retention pond inlet, and the Northern Channel are contaminated by PCBs [polychlorinated biphenyls], pesticides and metals. However, more areas were found with a total excess cancer risk of greater than  $10^{-6}$  through the SWRI and should be considered as “potential risk areas” as well.**
- Response: All areas with risks greater than  $1 \times 10^{-6}$  will be summarized in the final SWFS.
16. Comment: **Page 30, 2<sup>nd</sup> Paragraph; Section 1.3.3.2: It is true that wetland might be used for nonpoint source pollution control or for other purpose. However, the contaminants removed from waste stream will remain in wetland and may pose potential threat to ecological receptors. In order to maintain high quality wetlands at MFA, the Navy should be responsible for the existing contaminants and coordinate with NASA to minimize future impacts.**
- Response: The revised draft final SWFS has been extensively revised from the draft final and revised draft final SWFS. The text discussing the wetlands no longer includes its potential use for nonpoint-source pollution control.
17. Comment: **Page 41, 3<sup>rd</sup> Paragraph; Section 2.1: Please see general comment number 1. The remedial action objectives (RAOs) for upland soil should be included in Section 2.1.**
- Response: The risks related to metals in upland soils will be discussed in the SWFS. However, at the beginning of Section 2.0 the Navy will present the argument that metals represent background metals concentrations in sediment in the area. Remedial action objectives, general response actions, and technology screening will not address remediation of upland area soils with risks due to background metals concentrations.



18. **Comment:** Page 42, 2<sup>nd</sup> Paragraph; Section 2.1.1.1: The COCs [chemicals of concern] and chemicals of potential ecological concern (COPECs) identified in SWRI and SWEA are different from chemicals listed in Section 2.1.1.1. The statements “COCs identified in the HHRA requiring remediation. . .” and “COCs identified in the HHRA requiring remediation. . .” are confusing. Does that imply only some of the COCs require remediation but not all of them?

**Response:** The areas requiring remedial action due to the results of the human health risk assessment and the ecological risk assessment are discussed in Section 2.2.1 (Areas of Attainment) of the final SWFS.

19. **Comment:** Page 42, 2<sup>nd</sup> Paragraph; Section 2.1.1.1: The statement “There are no COCs for the landfill” seems incorrect to us. In Appendix E of the SWRI, 32 chemicals have been listed as COCs at Site 22.

**Response:** The landfill has been removed from the SWFS and is being addressed in a separate FS.

20. **Comment:** Page 42, 3<sup>rd</sup> Paragraph; Section 2.1.1.1: Metals in sediments should remain as chemicals of concern (COCs) in the alternative development process. The State recognizes that the spatial distribution of metal COPECs [chemicals of potential ecological concern] generally reflects the wetland drainage pattern, and relatively high concentration of metals in clay-size particles were found. However, the rationale provided by the Navy are argumentative and should not be used as the basis for screening out metals.

**Response:** Metals concentrations resulting in risks greater than  $1 \times 10^{-6}$  or HQ<sub>4</sub> greater than 1 will be discussed in Section 1.3 of the final SWFS. However, at the beginning of Section 2.0 the Navy will present the argument that the metals represent background metals concentrations in sediment and soil in the area. Remedial action objectives, general response actions, and technology screening will not address remediation of upland area soils with risks due to background metals concentrations.

21. **Comment:** Page 43, 2<sup>nd</sup> Paragraph; Section 2.1.1.2.1: A total excess cancer risk above  $1 \times 10^{-6}$  and a non-carcinogenic hazard indices in excess of 1.0 should be utilized to establish human health risk-based preliminary remediation goals (PRGs).

**Response:** The final SWFS presents summaries of the human health and ecological risk assessments in Section 1.3. Discussion of PRGs has been removed from the final SWFS.

22. **Comment:** Page 45, Last Paragraph; Section 2.1.1.2.2: According to our understanding, no “Ecological Risk-Based PRGs” have been approved by the State or USEPA Region IX. For surface water and benthic receptors, cleanup levels should be derived from site-specific data. However, HIs could be used for mammalian and avian receptors.

**Response:** The discussion of PRGs has been removed from the final SWFS.

23. **Comment:** Page 46, 2<sup>nd</sup> Paragraph; Section 2.1.1.2.2: It is inappropriate to select HI=100 as a cutoff point or overall cleanup level. There is not enough information to support that HI less than 100 will be protective to ecological receptors at MFA.
- Response:** The final SWFS will contain alternatives using the more conservative modeled HQs for the protection of avian receptors (HQ<sub>3</sub> and HQ<sub>4</sub>) in the stormwater retention ponds and the Eastern Diked Marsh (EDM) and HQ<1 for the protection of benthic communities in the Northern Channel (NC). The number of alternatives to be evaluated will be increased to cover these options. The description of the alternatives will be reviewed and revised to provide more complete descriptions of each alternative.
24. **Comment:** Page 52, 2<sup>nd</sup> Paragraph; Section 3.1: To our understanding, the COCs and COPECs have been determined through the studies of SWRI and SWEA. Unless the Navy is proposing new COCs and COPECs lists; otherwise, technologies and process options should be based on previous decisions.
- Response:** The final SWFS uses the results of the SWRI and the SWEA to guide the remedial action objectives, general response actions, and technology screening. However, it is the Navy's position that the risks in upland soils due to metals are the result of background metals concentrations. Therefore, remedial action objectives, general response actions, and technology screenings are not included for these soils.
25. **Comment:** Page 52, 4<sup>th</sup> Paragraph; Section 3.1: Please see specific comment number 20.
- Response:** See response to specific comment 20.
26. **Comment:** Page 75, 3<sup>rd</sup> Paragraph; Section 4.0: As it is stated in the third sentence of this paragraph, "The alternatives are structured around the range of attainment areas. . .", the only difference among Alternatives 3 through 7 is the size of capping area. It is more like selecting cleanup standards rather than identifying different remedial alternatives.
- Response:** The final SWFS presents a range of alternatives based on technologies and on the areas of attainment.
27. **Comment:** Page 80, 2<sup>nd</sup> Paragraph; Section 4.0: In addition to no action (Alternative 1) or multilayer capping (Alternative 2), please also consider excavating and consolidating waste from Golf Course Landfill 2 into Site 1.
- Response:** The FS for Site 22 has been removed from the final SWFS and is being prepared as a separate document.

### **3.0 RESPONSES TO RWQCB COMMENTS**

#### **3.1 GENERAL COMMENTS**

1. **Comment:** The information provided in the Executive Summary describing the draft nature of this draft final version is appreciated and should help future readers understand the basis for the broad and significant comments from the agencies regarding the scope of this document. Since this is the first submittal that addresses potential ecological risks, albeit without a Final Station Wide Ecological Assessment (SWEA), it is appropriate that basic and fundamental

**comments on the scope and objective of remedial and mitigation actions be addressed at this phase. The Navy's openness does demonstrate a willingness to work together in achieving environmentally appropriate goals. These comments are presented in that spirit.**

Response: Comment noted. Several changes have been made in the revised draft final SWFS and the subsequent final SWFS now in progress.

2. **Comment:** **The feasibility study (FS) should present and compare of all risk levels and the associated remedial options. This information is then used to make risk management decisions on the final remedial strategy. Prescreening and the exclusion of risk evaluation of increased cancer occurrence of 1E-5 and 1E-6 is a risk management decision and not appropriate without prior agreement of the Base Closure Team (BCT). Incorporate risk evaluations for cancer occurrences of 1E-5 and 1E-6 for human health risk-based preliminary remediation goals (PRGs).**

Response: The final SWFS will present the results from the SWRI showing all areas with excess lifetime cancer risks to humans that exceed  $1 \times 10^{-6}$ .

3. **Comment:** **The use of HQ<sub>1</sub> and HQ<sub>4</sub> as criteria to determine remedial area without a full presentation the development of all HQs is inadequate. The basis of the criteria must be presented to support such a cleanup area evaluation.**

Response: The final SWFS will contain alternatives using the more conservative modeled HQs for the protection of avian receptors (HQ<sub>3</sub> and HQ<sub>4</sub>) in the stormwater retention ponds and the EDM and HQ<1 for the protection of benthic communities in the Northern Channel (NC). The number of alternatives to be evaluated will be increased to cover these options. The description of the alternatives will be reviewed and revised to provide more complete descriptions of each alternative.

4. **Comment:** **The evaluation of impact associated with the numerical value of the HI and HQ is insufficient and must be further detailed prior to a remedial option selection based on any hazard value.**

Response: See response to general comment 3.

5. **Comment:** **Incorporate risk evaluation of metals into the FS since its exclusion is a risk management decision to be made after reviewing a complete FS.**

Response: Metals concentrations resulting in risks greater than  $1 \times 10^{-6}$  or HQ<sub>4</sub> greater than 1 will be discussed in Section 1.3 of the final SWFS. However, at the beginning of Section 2.0 the Navy will present the argument that the metals represent background metals concentrations in sediment in the area. Remedial action objectives, general response actions, and technology screening will not address remediation of upland area soils with risks due to background metals concentrations.

6. **Comment:** **The exclusion of remedial options such as consolidation of the landfills and mitigation of wetlands in the evaluation is problematic. Based on lessons learned from the Operable Unit 1 RI/FS, evaluation of a wide scope of remedial options is imperative. The importance of being flexible and innovative is not being recognized by limiting the evaluation to such a narrow scope of remedial alternatives.**

Response: The landfills are now being addressed by a separate FS. Mitigation of wetlands has been added as a remedial alternative in the draft final and final SWFS.

7. **Comment:** **What is the feasibility of wetland mitigation as a remedial option? Is the Navy able to consider outright purchase of adjacent properties, e.g., Cargill salt evaporators, and create wetlands? Alternatively, could the Navy consider funding existing environmental enhancement projects or public education projects as mitigation for wetland impacts, a partial list of potential projects is included as Appendix A to these comments.**

Response: The Navy cannot use installation restoration program funds to purchase wetlands or fund existing wetlands projects in lieu of cleanup at MFA.

8. **Comment:** **This discussion regarding future land uses needs to be expanded. What is the Navy's plan if land use changes, would the Navy prohibit the development of wetlands if a particular remedial option is taken? Is the Navy concerned with addressing strictly the present uses and reevaluate the remedial strategy if land use changes in the future?**

Response: Potential future land uses have been evaluated by the Navy and NASA and presented in the SWRI. Additional reference will be made to this document in the SWFS. EPA guidance directs the preparer of the FS to select remedial alternatives based on the most likely future land use. This is being done.

9. **Comment:** **With identification of the Northern Channel as a potential risk area, operations at Building 191 need to be evaluated. Incorporate text describing present and future operation, discharge characterization, permit status, and remedial option evaluation.**

Response: Additional discussion of the operation of Building 191 will be added to Section 1.2.4.6.

10. **Comment:** **The problem of continuing sources recontaminating proposed remediated areas needs to be addressed. Specifically, present a strategy to remove impacted sediments from the storm drain system. The strategy should map and propose remedial action for all the sumps, catch drains, and piping to identify and remove continuing sources.**

Response: NASA has an ongoing maintenance program for cleaning out the storm drains at MFA. In addition, a new stormwater settling basin has been constructed by NASA to handle stormwater on the west side of MFA.

### 3.2 SPECIFIC COMMENTS

1. **Comment:** **Page ES-2: Please incorporate the basis for the statement, "... agencies accept destroying active and thriving wetlands. . ." or revise.**

Response: This sentence has been removed from the final SWFS.

2. **Comment:** **Page 6, Section 1.2.2, Paragraph 3: Revise the statement that no groundwater is pumped from the aquifers underlying MFA to include the recently identified groundwater pumping by NASA for industrial process water.**

Response: This section will be revised to indicate that NASA also uses groundwater for irrigation and agriculture.

3. **Comment:** Page 8, Sec. 1.2.3.1, Par. 2: Revise OU1 ROD time line.
- Response:** This section will be revised for the final SWFS.
4. **Comment:** Page 11, Sec. 1.2.3.7, Site 23: Identify the document in which the investigation results are presented.
- Response:** A reference to the SWRI, in which the results of this investigation are presented, will be added to this paragraph.
5. **Comment:** Page 12, Sec. 1.2.3.7, Weapons Storage Bunker: Identify the document in which the investigation results are presented.
- Response:** A reference to the SWRI, in which the results of this investigation are presented, will be added to this paragraph.
6. **Comment:** Page 12, Sec. 1.2.3.7, Potential Runway Wetland: Revise to incorporate the recent re-abandonment of the agricultural well.
- Response:** A reference to a letter report, in which the results of this investigation are presented, will be added to this paragraph.
7. **Comment:** Page 14, Sec. 1.3.1, Par. 2: Incorporate a data table presenting the sampling depths and number of sample collected from each depth in this section.
- Response:** The data used in the human health risk assessment are presented in the final SWRI. A reference to this document will be added to this paragraph.
8. **Comment:** Page 15, Sec. 1.3.1, Par. 2: Revise to incorporate dates, amounts, and references documents for the removal action performed by NASA.
- Response:** A reference to the report describing the work done at this site, prepared by Science Applications International Corporation (SAIC) for NASA, will be added to this section.
9. **Comment:** Page 15, Sec. 1.3.1.1: See general comment 2.
- Response:** See response to general comment 2.
10. **Comment:** Page 15, Sec. 1.3.1.1, Par. 2: Please revise the description of Plate 1 in the text, since Plate 1 only shows boring locations and the exposure grid. Perhaps, this is a reference to Plate 2?
- Response:** This reference has been corrected to Plate 2.
11. **Comment:** Page 16, Sec. 1.3.1.2, Par. 2: See general comment 4.
- Response:** See response to general comment 4.
12. **Comment:** Page 18, Sec. 1.3.2.1, Par. 2: See general comment 4. Additionally, please verify reference to Menzie and others (1993) since 1992 is given in Section 7.0, References.
- Response:** This paragraph has been removed from the final SWFS.

13. **Comment:** Page 21, Sec. 1.3.2.1, Par. 2: See general comment 4.
- Response:** See response to general comment 4.
14. **Comment:** Page 22, Uncertainties: What, if any, response was taken to mitigate the impact of these uncertainties?
- Response:** Many of these uncertainties cannot be reduced without significant additional research that is beyond the scope of site-specific ecological risk assessments.
15. **Comment:** Page 25, 1.3.2.2: Please evaluate any correlation between increasing HQ values and the potential impact from individuals to populations. Include a discussion addressing the HQ types.
- Response:** The text in this paragraph is taken from the final SWEA. A reference to the SWEA and some additional discussion will be added in this section.
16. **Comment:** Page 26, 1.3.3.1, Par. 1: Clarification of horizontal and vertical velocities required.
- Response:** This discussion has been removed from the final SWFS. In its place, a discussion of fate and transport more directly related to the contaminants found in the wetlands was added.
17. **Comment:** Page 27, 1.3.3.1, Par. 2: Provide the source of the effective porosity value,  $n=0.4$ .
- Response:** This discussion has been removed from the final SWFS.
18. **Comment:** Page 27, 1.3.3.1, Par. 3: Compare modeled groundwater gradient results to actual field data and discuss the inconsistencies. The text states that in the most conservative cases, the fastest horizontal groundwater gradient is 0.33 feet per year (ft/yr). This value does not compare well with observed plume migration in the northern areas of MFA. For example, conservatively assuming a single source in the area of the flux ponds and neglecting dispersion, the chlorinated hydrocarbon plume within OU5 is approximately 1,300 feet long, thus using the 0.33 ft/yr value, the date of release should have been approximately 4,000 years ago. Please calculate horizontal groundwater velocities using observed field data.
- Response:** This discussion has been removed from the final SWFS.
19. **Comment:** Page 27, 1.3.3.1, Par. 4: Are the groundwater velocities “actual groundwater velocities” based on field tests or are they modeled velocities. Include a discussion regarding the existence of the former stream channels and associated preferential groundwater pathways.
- Response:** This discussion has been removed from the final SWFS.
20. **Comment:** Page 27, 1.3.3.1, Par. 5: Consider revising to, “A key parameter describing a chemical’s degree . . .”
- Response:** This discussion has been removed from the final SWFS.

21. **Comment:** Page 29, Conclusions: The conclusions should be reevaluated using observed groundwater velocities. A comparison of modeled and observed values and pertinent discussion should be helpful.
- Response:** This discussion has been removed from the final SWFS.
22. **Comment:** Page 42, 2.1.1.1: See general comment 2. Incorporate the risks associated with metals in such a way that the reader can understand risk levels associated with ambient soil levels at 0 to 2 feet depth and the associated risk levels of metals in sediment transported in stormwater runoff. Following the completion of the final SWEA, metals identified as a potential ecological risk should be addressed.
- Response:** Metals concentrations resulting in risks greater than  $1 \times 10^{-6}$  or HQ<sub>4</sub> greater than 1 will be discussed in Section 1.3 of the final SWFS. However, at the beginning of Section 2.0 the Navy will present the argument that the metals represent background metals concentrations in sediment in the area. Remedial action objectives, general response actions, and technology screening will not address remediation of upland area soils with risks due to background metals concentrations.
23. **Comment:** Pages 43, 45, and 47; Sections 2.1.1.2.1, 2.1.1.2.1(?) and 2.1.1.3: See general comments 2, 3 and 4.
- Response:** See responses to general comments 2, 3, and 4.
24. **Comment:** Page 54, Sec. 3.1.4: Removal of soil and sediment must address the first 2 feet since the risk assessment was based on the 0 to 2 feet horizon. A comparative risk analysis evaluating a variety of depths removed would be helpful.
- Response:** If the polychlorinated biphenyl (PCB) contaminants can be shown to be concentrated in the top few inches of the sediment, then only this amount of sediment will be removed. Sediment samples would then be collected to confirm that the risk has been reduced to acceptable levels.
25. **Comment:** Pages 76 and 80; Sections 4.1 and 4.2: See general comment 6.
- Response:** See response to general comment 6.
26. **Comment:** Plate 1: This would be greatly improved if grid boxes that contained samples that were evaluated were shaded lightly. The base boundary is not accurately depicted in the area of the fuel pier.
- Response:** The base boundary in the area of the fuel pier will be reviewed and revised if necessary. No additional shading will be added to the plate.
27. **Comment:** Plate 2: This would be greatly improved if grid boxes that contained samples that were evaluated were shaded lightly. The base boundary is not accurately depicted in the area of the fuel pier. The type of risk shown needs to be described in the legend.
- Response:** The information on this plate will be divided onto two plates. No additional shading will be added.

28. **Comment:** **Table A-4: Groundwater Monitoring: List Title 23 CCR, Chapter 15, Article 5 as general groundwater monitoring requirements as it is described in the text. Additionally, complete the requirement description.**

**Response:** The landfills are now being addressed in a separate FS.

29. **Comment:** **Figure 2: Please revise boundary to include the fuel pier and provide information describing its status.**

**Response:** This boundary will be reviewed and revised if necessary.

30. **Comment:** **Figure B-2: Please provide information describing the operation of the emergency pump station located in the northwest corner of the stormwater retention pond.**

**Response:** This figure has been removed from Appendix B of the final SWFS. The pumps shown on this figure are no longer present at this location. They are now being used as backup pumps at Building 191.